

### REMARKS

The present invention relates to flexible polyurethane foams which are the reaction product of a polyisocyanate and a polyether polyol. The polyether polyol which is produced by alkoxylation in the presence of a double metal cyanide catalyst has (a) a terminal propylene oxide block; (b) at least one ethylene oxide/propylene oxide mixed block; and (c) a number average molecular weight of from 700 to 50,000 g/mole.

Claims 11 and 13-15 stand rejected under 35 U.S.C. §102(e) as being anticipated by Thompson et al (U.S. Patent 6,008,263). Applicants respectfully traverse this rejection.

Thompson et al discloses the use of polyols in which mixtures of ethylene oxide and propylene oxide are used in both stages of production of the polyol. The polyol component required by Thompson et al must have two different multiblock polyols each of which must have at least 1.5 weight percent ethylene oxide in the external blocks. Consequently, the polyols used to produce foams in accordance with the teachings of Thompson et al can **not** have a terminal propylene oxide block of the type required in Applicants' claimed invention.

Thompson et al does not therefore disclose the claimed invention in the manner necessary to support a rejection under 35 U.S.C. § 102(e).

In response to this argument, the Patent Office has maintained that:

"Thompson et al.'s disclosure is encompassing of the distributions and amounts of the various blocks in the polyols used as described by applicants' claims, and no distinction is seen to exist between the reference's disclosed flexible foams and the foams defined by applicants' claimed foaming techniques as they are both directed towards flexible foams and it is the composition which defines the product being claimed in the instant case." At page 3, lines 4-9 of the Office Action dated November 7, 2003.

To support a rejection under 35 U.S.C. § 102, a reference must clearly and unequivocally disclose the claimed compound or direct those skilled in the art to the compound without any need for picking, choosing and combining various disclosures. In re Arkley 172 USPQ 524 (CCPA 1972).

Mo6843

-2-

It has been held that a reference disclosing C<sub>1</sub>-C<sub>8</sub> alkyl groups as suitable constituents R<sub>1</sub> did not anticipate an invention in which R<sub>1</sub> represented a t-butyl group because the precision necessary for anticipation under 35 U.S.C. 102 was lacking. Ex parte Westphal 223 USPQ 630 (Bd. App. 1983). It has also been held that disclosure of a genus does not identically disclose or describe a species in that genus within the meaning of 35 U.S.C. 102. See, e.g., In re Meyer 202 USPQ 175 (CCPA 1979).

Thompson et al does not teach the use of any polyol having a terminal polypropylene block in which no ethylene oxide is present in the course of the DMC-catalyzed process to produce foams in accordance with the process disclosed therein. In fact, Thompson et al teaches that ethylene oxide should be present at least 95%, most preferably at least 99% of the time that the alkoxylation reaction is being conducted. (See discussion at column 5, line 60 through column 6, line 11 of Thompson et al.)

Applicants' invention which requires a terminal propylene oxide block in which no ethylene oxide is present is not therefore disclosed by Thompson et al in the manner necessary to support a proper rejection under 35 U.S.C. § 102.

Withdrawal of this rejection is therefore requested.

Claims 11 and 13-15 further stand rejected under 35 U.S.C. § 102(e) as being anticipated by Lear et al (U.S. Patent 5,958,994). Applicants respectfully traverse this rejection.

Lear et al requires a polyol having a high molecular weight tail containing oxypropylene and oxyethylene moieties with a substantially homopolyoxypropylene cap. The high molecular weight tail of Lear et al has a number average molecular weight greater than 80,000 Da.

Lear et al also teaches that not all polyols produced with a DMC catalyst will have the high molecular weight tail which presented the problem solved in that reference process. (At column 6, lines 1-9.)

Applicants' invention requires an isocyanate-reactive component having a number average molecular weight of from 700 to 50,000 g/mole. Applicants' claimed invention does not, however, require the high molecular weight tail which

Mo6843

-3-

must be present in the Lear et al foam-forming composition. Nor would such high molecular weight tail be inherently present in all polyols produced with a DMC catalyst.

One skilled in the art reading the Lear et al disclosure would not therefore consider the teachings of this reference pertinent to foam-forming mixtures in which no high molecular weight tail-containing polyol was present.

Lear et al does not therefore disclose Applicants' claimed invention in the manner necessary to support a proper rejection under 35 U.S.C. § 102(e).

Withdrawal of this rejection is therefore requested.

Claims 11 and 13-15 also stand rejected under 35 U.S.C. § 102(e) as being anticipated by Beisner et al (U.S. 6,066,683). Applicants respectfully traverse this rejection.

Beisner et al discloses foams made with a polyol having a random ethylene oxide content of from about 1.5 to no more than 5 weight percent. Beisner et al does require a polyol having the terminal propylene oxide block but teaches that even when the disclosed polyols are "capped" with propylene oxide, that propylene oxide should not be present in an amount greater than 5 wt% because

When more than a 5 weight percent DMC-catalyzed polyoxypropylene cap is employed, the polyols are **unsuitable** in molded and slab form [sic] formulations, causing foam collapse. (column 7, lines 8-11) (emphasis added).

Applicants' claimed invention does not have this 5 wt% propylene oxide limitation. In fact, Applicants' Example 2 illustrates a polyol produced using a DMC catalyst which polyol has a terminal propylene oxide block present in an amount greater than 5 wt%. This polyol was used in Applicants' Example 10 to produce a crack-free foam block.

An invention which is contrary to the teachings of the prior art is clearly not disclosed by that prior art.

Beisner et al does not therefore disclose Applicants' claimed process for the production of foam in the manner necessary to support a proper rejection under 35 U.S.C. § 102(e).

Withdrawal of this rejection is therefore requested.

Claims 11 and 13-15 have also been rejected under 35 U.S.C. § 102(b) as being anticipated by Hager (U.S. Patent 5,648,559). Applicants respectfully traverse this rejection.

Hager discloses high resilience polyurethane foams produced with a polyol component that must include a polyol having one or more random poly(oxypropylene/oxyethylene) external blocks. Hager specifically teaches:

However, substantial DMC-catalyzed, all polyoxypropylene blocks **must be avoided** to eliminate foam shrinkage. (At column 8, lines 2-4) (emphasis added).

One skilled in the art reading the above-quoted teaching of Hager would clearly **not** consider this to be teaching that a polyol produced with a DMC catalyst having a terminal propylene oxide block will produce a foam having good physical properties.

Applicants' process for producing foams which **requires** a polyol produced with a DMC catalyst having a terminal propylene oxide block is not therefore disclosed by Hager in the manner necessary to support a proper rejection under 35 U.S.C. § 102.

Withdrawal of this rejection is therefore requested.

Claims 11 and 13-15 further stand rejected under 35 U.S.C. § 102(b) as being anticipated Kinkelaar et al (U.S. Patent 5,668,191). Applicants respectfully traverse this rejection.

Kinkelaar et al teaches cold-molded, flexible-polyurethane foams produced from a polyol prepared by oxyalkylating a "suitably hydric" initiator molecule with propylene oxide alone, a mixture of propylene oxide and a higher alkylene oxide, or a mixture of any of these oxides with ethylene oxide. The composition of the alkylene oxide feed may be changed during the oxyalkylation to produce a variety of random and block/random configurations. The only example of a suitable procedure

for making such a polyol given in the reference had as the first step oxyalkylation conducted with only propylene oxide and as the second step, oxyalkylation with both propylene oxide and ethylene oxide.

"The resulting polyol would, in such case, contain an internal polyoxypropylene block and an external random polyoxypropylene/polyoxyethylene block." (At column 4, lines 25-27)(emphasis added).

External random PO/EO blocks clearly do not anticipate Applicants' required polyol having a terminal propylene oxide (PO) block.

Kinkelaar et al does not therefore disclose Applicants' claimed invention in the manner necessary to support a proper rejection under 35 U.S.C. § 102(b).

Withdrawal of this rejection is therefore requested.

In view of the above remarks, reconsideration and allowance of Claims 11 and 13-15 are respectfully requested.

Respectfully submitted,

By 

Lyndanne M. Whalen  
Attorney for Applicants  
Reg. No. 29,457

Bayer Polymers LLC  
100 Bayer Road  
Pittsburgh, Pennsylvania 15205-9741  
(412) 777-3843  
FACSIMILE PHONE NUMBER:  
(412) 777-3902

/jme/LMW/LW0680

Mo6843

-6-